

DIHYBRID CROSS PRACTICE

1. A common dominant gene involves an uneven distribution of skin pigment resulting in freckles. A second toe longer than the big toe is also inherited as dominant over a shorter second toe. A woman who is heterozygous for both freckles and a long second toe marries a man who is also heterozygous for both freckles and a long second toe.

Alleles: **Dominant:** F = freckles , L = long toe **Recessive:** f = no freckles , l = short toe

Parent Genotypes:

_____ x _____

Gametes

- a) _____ e) _____
 b) _____ f) _____
 c) _____ g) _____
 d) _____ h) _____

Genotypic ratio: _____

Phenotypic ratio: _____

What would you expect their children to look like? _____

2. About 70 percent of Americans get a bitter taste from a chemical called phenyl thiocarbamide (PTC) and the other taste nothing. The ability to taste it comes from a dominant gene while non tasters have the recessive gene. A woman with normal skin pigment who is a non taster has a father who is an albino taster. She marries an albino man who is a taster, but who has a mother who is a non taster.

Alleles: **Dominant:** _____ , _____ **Recessive:** _____ , _____

Parent Genotypes:

_____ x _____

Gametes

- a) _____ e) _____
 b) _____ f) _____
 c) _____ g) _____
 d) _____ h) _____

Genotypic ratio: _____

Phenotypic ratio: _____

What would you expect the phenotypes of their children to be? _____

3. Tongue rolling is dominant over non-rolling and right handedness is dominant over left handedness. A left handed man who is heterozygous for tongue rolling marries a purebred right handed woman who is a non roller.

Alleles: **Dominant:** _____ , _____ **Recessive:** _____ , _____

Parent Genotypes:

_____ x _____

Gametes

- a) _____ e) _____
- b) _____ f) _____
- c) _____ g) _____
- d) _____ h) _____

Genotypic ratio: _____

Phenotypic ratio: _____

What would be the expected phenotypes of their children? _____

4. Some dogs bark when trailing and others are silent. The barking trait is due to a dominant gene. Pointed ears are dominant to drooping ears. What kind of pups would be expected from a heterozygous pointed eared barker mated to a droop eared silent trailer?

Alleles: **Dominant:** _____ , _____ **Recessive:** _____ , _____

Parent Genotypes:

_____ x _____

Gametes

- a) _____ e) _____
- b) _____ f) _____
- c) _____ g) _____
- d) _____ h) _____

Genotypic ratio: _____

Phenotypic ratio: _____

What would be the expected phenotypes of their children? _____

Name: _____ Period: _____ Date: _____ Doc # 45